UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/749,178	12/26/2000	Chandrasekar Krishnamurthy	081862.P222	6137

7590 11/02/2004		EXAMINER
R. Alan Burnett		TON, ANTHONY T

R. Alan Burnett
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
7th Floor
12400 Wilshire Boulevard
Los Angeles, CA 90025

ART UNIT	PAPER NUMBER
2661	

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/749,178	KRISHNAMURTHY ET AL.
	Examiner	Art Unit
	Anthony T Ton	2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 June 2004*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.
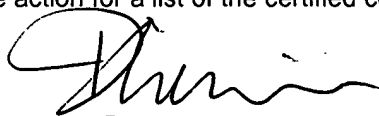
Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 June 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

PHIRIN SAM
PRIMARY EXAMINER

Attachment(s)	
1)☒ Notice of References Cited (PTO-892)	4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5)☐ Notice of Informal Patent Application (PTO-152)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ .	6)☐ Other: _____ .

DETAILED ACTIONS

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   **Claims 1-8 and 24-28** are rejected under 35 U.S.C. 102(b) as being anticipated by **Liang**

et al. (US Patent No. **5,781,529**) hereinafter refers to as **Liang**.

a) **Regarding to Claim 1**: **Liang disclosed** a method for diagnosing a failure in a

network switching device comprising:

receiving a data packet containing a debug information element (IE) at the network

switching device *(see Fig.7A: steps 102, 106 and 152; and col.3 lines 12-19: DTL IE (debug*

IE));

extracting the debug IE from the data packet *(see Fig.7A: step 152)*; and

performing at least one diagnostic function on the network switching device in

response to information contained in the debug IE *(see col.3 lines 20-39: the returned*

information can then be used for diagnostic purposes; col.2 lines 57-65; and col.11 lines 44-49).

b) **Regarding to Claim 2**: **Liang further disclosed** the method further comprising

communicating results of said at least one diagnostic function from the network switching device

to a selected end point connected to the network switching device via a communications link *(see*

col.11 lines 36-49: thereby providing useful diagnostic information in the situations where the

routing fails).

c) **Regarding to Claim 3: Liang further disclosed** the debug IE is embedded in a

connection-management message *(see col.3 lines 5-12: the node inserts (embed) a desired*

designated transit list as an information element (debug IE) of the setup message (connection-

management message)).

d) **Regarding to Claim 4: Liang further disclosed** the debug IE is formatted so as to be

propagated transparently across network switching devices that are not configured to recognize

the debug IE *(see col.4 lines 16-31: The routing methods and systems of the invention which*

utilize DTLs clearly eliminate the need for determining routes at intermediate nodes).

e) **Regarding to Claim 5: Liang disclosed** a method for diagnosing a failure in a

network switching device comprising:

embedding a debug information element (IE) in a message *(see col.3 lines 5-12: inserts*

(embed) a desired designated transit list as an information element (debug IE) of the setup

message (a message));

receiving results of at least one failure diagnostic function from a network switching

device configured to respond to the debug IE *(see col.5 line 35-43)*; and

wherein the debug IE is formatted so as to be propagated transparently across network

switching devices that are not configured to recognize the debug IE *(see col.4 lines 16-31: The*

routing methods and systems of the invention which utilize DTLs clearly eliminate the need for

determining routes at intermediate nodes).

f) **Regarding to Claim 6: Liang further disclosed** the debug IE is embedded in a

connection-management message *(see col.3 lines 5-12: the node inserts (embed) a desired*

designated transit list as an information element (debug IE) of the setup message (connection-

management message)).

g) **Regarding to Claim 7: Liang further disclosed** the debug IE includes information

specifying a network switching device on which the failure diagnostic function is performed *(see*

col.6 lines 4-7; and col.3 lines 32-39).

h) **Regarding to Claim 8: Liang further disclosed** the debug IE includes information

identifying said at least one failure diagnostic function *(see col.7 line 48 – col.8 line 6).*

i) **Regarding to Claims 24-25 and 26-28**: the claimed subject matters of these claims are

the same as that of claims 1-2 and 5-7, respectively. Therefore, the rejections to claims 1-2 and

5-7 would also apply to reject these claims for the same reasons as claim 1-2 and 5-7 because

method steps can be programmed to automate a process. The resulting program is considered as

firmware that the apparatus uses to perform the method steps.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth
> in section 102 of this title, if the differences between the subject matter sought to be patented and the prior
> art are such that the subject matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made.

4.   **Claims 9-14** and **16-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Liang et al. (US Patent No. **5,781,529**) in view of **Or et al.** (US Patent No. **6,532,237**)

hereinafter referred to as **Liang** and **Or**, respectively.

a) **Regarding to Claim 9**: **Liang disclosed** a method for diagnosing a failure in

connection comprising a plurality of nodes in a communication network *(see Fig.1)* comprising:

embedding a debug information element (IE) in a message *(see col.3 lines 5-12: inserts*

(embed) a desired designated transit list as an information element (debug IE) of the setup

message (a message));

propagating the data packet to a plurality of switching devices corresponding to

respective nodes along the connection path *(see the last sentence in Abstract and col.10 lines 42-*

64);

extracting the debug IE from the data packet at selected switching device among said

plurality of switching devices *(see Figs.7A and 7B: steps 152 and 124; and col.9 lines 25-33)*;

and

Liang failed to explicitly disclose performing at least one diagnostic function on

targeted switching devices among said selected switching devices in response to information

contained in the debug IE.

Or disclosed such performing at least one diagnostic function on targeted switching

devices among said selected switching devices in response to information contained in the debug

IE (*see Fig.6; and col.10 lines 58-67*).

At the time of the invention, **it would be obvious** to a person of ordinary skill in the art to

combine such performing at least one diagnostic function on targeted switching devices among

said selected switching devices in response to information contained in the debug IE, as taught

by Or with the Liang, so that a failure in any communication group in an ATM network can be

tested to detect the failure. **The motivation** for doing so would have been to provide for a system

under test to execute a complete device software on a real physical device as opposed to a

completely simulated network hosted by a computer platform *(see Or: ol.8 lines 41-49).*

Therefore, it would have been obvious to combine Or with the Liang in the invention as

specified in the claim.

b) **Regarding to Claim 10: Liang further disclosed** the debug IE is embedded in a

connection-management message *(see col.3 lines 5-12: the node inserts (embed) a desired*

designated transit list as an information element (debug IE) of the setup message (connection-

management message)).

c) **Regarding to Claim 11: Liang further disclosed** the communication network

comprises a plurality of Asynchronous Transfer Mode (ATM) switching devices *(see Fig.1).*

d) **Regarding to Claim 12: Liang further disclosed** the debug IE includes information

specifying the targeted switching devices *(see col.6 lines 4-7; and col.11 lines 36-49).*

e) **Regarding to Claim 13: Liang further disclosed** the debug IE includes information

identifying said at least one failure analysis function to be performed *(see col.7 line 48 – col.8*

line 6).

f) **Regarding to Claim 14: Liang disclosed** all aspects of this claim as set forth in claim

9.

Liang failed to explicitly disclose the selected switching devices correspond to

switching devices supplied by a particular vendor.

Or disclosed such selected switching devices correspond to switching devices supplied

by a particular vendor *(see col.1 line 67– col.2 line 2, customers of ATM network equipment*

some level of multi-vendor interoperability).

At the time of the invention, **it would be obvious** to a person of ordinary skill in the art to combine such selected switching devices correspond to switching devices supplied by a particular vendor, as taught by Or with the Liang, so that particular switching devices in a communications network can be specially installed by a particular vendor. **The motivation** for doing so would have been to meet the goal of the PNNI specifications to provide customers of ATM network equipment at some level of multi-vendor interoperability *(see Or: col.1 line 67- col.2 line 2)*. Therefore, it would have been obvious to combine Or with the Liang in the invention as specified in the claim.

g) **Regarding to Claim 16**: **Liang further disclosed** the method further comprising communicating results of said at least one failure analysis function from the targeted switching devices to an operator of the targeted switching devices or the communication network *(see col.3 lines 31-39: originating node (operator))*.

h) **Regarding to Claim 17**: **Liang further disclosed** the results from said at least one failure analysis function are communicated to the operator of said targeted switching devices by passing the results to a data station *(see Fig.2 and col.5 lines 35-43: external workstation 50 (data station))*.

i) **Regarding to Claim 18**: **Liang further disclosed** the results are passed to the data station via at least one communication link that connects at least one of the targeted switching devices to the data station *(see Figs.1 and 2; and col.11 lines 6-35)*.

j) **Regarding to Claim 19**: **Liang further disclosed** the results are passed to the data station by passing information from at least one of the targeted switching devices to another

switching device along the connection path, said another switching device passing the results to

the data station *(see Figs.1 and 2; and col.3 lines 20-39)*.

        k) Regarding to Claim 20: Liang further disclosed the targeted switching devices

comprise switching devices along a specific portion of the connection path *(see Fig.2: 30; and

col.11 lines 6-26)*.

        l) Regarding to Claim 21: Liang further disclosed the targeted switching devices

comprise switching devices that are members of a logical peer group in an ATM hierarchy *(see

Fig.1; and col.2 lines 4-26: a node outside the peer group, next higher level portion)* .

        m) Regarding to Claim 22: Liang further disclosed the network comprises a Private

Network-Network Interface network *(see col.1 lines 47-52: PNNI)*.

        n) Regarding to Claim 23: Liang further disclosed the method further comprising:

        identifying said plurality of switching devices comprising the communications

path *(see Fig.1)*;

        identifying a switching device along the communications path corresponding

to a failure point in the communications path *(col.3 lines 40-48)*;

        forwarding the message from switching device to switching device along the

communication path until it reaches the switching device corresponding to the failure

point *(see col.3 lines 1-39)*; and

        encoding the debug IE so as to instruct the switching device corresponding to

the failure point to perform at least on failure diagnostic functions to identify why the

switching device failed *(see Figs.3 and 5; and col.8 lines 1-6; and col.11 lines 36-49)*.

5.   **Claims 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Liang et al.**

(US Patent No. **5,781,529**) in view of **Or et al.** (US Patent No. **6,532,237**) as applied to claims 9

and 14 above, and further in view of **Eriksson et al.** (US Patent No. **6,243,384**) hereinafter refers

to as **Eriksson**.

Liang disclosed all aspects of this claim as set forth in claims 9 and 14.

Liang further disclosed the debug IE is encoded in the data packet such that it is passed

along *(see col.4 lines 16-31: The routing methods and systems of the invention which utilize*

DTLs clearly eliminate the need for determining routes at intermediate nodes).

Liang failed to explicitly disclose the debug IE is encoded in the data packet such that it

is dropped by switching devices at the nodes of the connection path that are not supplied by the

particular vendor.

Eriksson disclosed such debug IE is encoded in the data packet such that it is dropped by

switching devices at the nodes of the connection path that are not supplied by the particular

vendor *(see col. 8 lines 45-52, the result returned by table handling unit 60 from a routing test*

(the debug IE) can be either of the following depending on the circumstances: a terminating case

with a port ID (the debug IE is dropped)).

At the time of the invention, **it would be obvious** to a person of ordinary skill in the art to

combine such debug IE is encoded in the data packet such that it is dropped by switching devices

at the nodes of the connection path that are not supplied by the particular vendor, as taught by

Eriksson with the Liang, in order to enable PNNI protocol in a plurality of switching nodes of an

ATM communication network. **The motivation** for doing so would have been to provide an

integration to multi-vendor ATM switches in the same network. Therefore, it would have been

obvious to combine Eriksson with the Liang in the invention as specified in the claim.

Response to Arguments

6.   Applicants' arguments filed on **6/18/2004** with respect to **claims 1-28** have been

considered but are moot in view of the new ground(s) of rejection.

Examiner Information

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to **Anthony T Ton** whose telephone number is **571-272-3076**. The

examiner can normally be reached on M-F: 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, **Ken Vanderpuye** can be reached on **571-272-3078**. The fax phone number for the

organization where this application or proceeding is assigned is **571-273-3076**.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Respectfully submitted,

by :_____
Anthony T. Ton
Patent Examiner
October 25, 2004

PHIRIN SAM
PRIMARY EXAMINER